



## Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact [support@jstor.org](mailto:support@jstor.org).

the extreme south of the Province and were in the last decades of the nineteenth century still a threat to the peaceable settlements of agriculturists. At present the foreign population represents more than twelve per cent of all the inhabitants, whereas the proportion of foreigners to natives, in the Argentine, is one to four. Italians constitute the greatest number of immigrants, then follow the Spaniards and the French. Numerous statistical tables present various phases in touch with the conditions of the people. The lengthy sections devoted to Agriculture, Government, and Laws are valuable to the visitor and immigrant who wishes to inform himself on the chances and drawbacks presented to him in the Argentine.

The report finally goes over into the geographic description of the Departments into which the Province of Córdoba is subdivided. Much of this being, of necessity, a repetition of the preceding, we forbear entering into details about it. On the whole, the two volumes are a valuable addition to geographic and statistical knowledge, and important to the traveller as well as to intending colonists. While there is, of course, an easily discernible tendency not to diminish the beauty and resources of the Province, it seems to be wholly justified. A handsome Atlas in folio accompanies the very well-printed text. Among South American official publications this one by Messrs. Rio and Achával will always hold a worthy place.

A. F. B.

**Ueber die Küstenbildungen des Bottnischen Meerbusens zwischen Tornio und Kokkola.** Akademische Abhandlung von I. Leiviskä. Helsingfors, 1905. K. Malmström, Publisher. 225 pp. Two maps.

The coast of Finland between Tornio and Kokkola—viz., between  $64^{\circ}$  and  $66^{\circ}$  N.—differs from other parts of the coast of the Gulf of Bothnia through the lack, or very limited number, of islands. While a general family resemblance is evident in all parts of the region described, its features present some perfectly distinct types. Sometimes a great number of them are crowded together on a limited area, sometimes the character of the coast remains unchanged for many miles. Upon the basis of a minute study of every part of the coast from Kokkola to Tornio, the author gives a classification and explanation of the various types. Examining the larger or smaller number of bays, necks, and islands, their shapes, the steepness of the coast, the material of which it is built, etc., the author distinguishes five principal types—meadow, pasture, sandy, stony, and rocky coasts.

1. Meadow coasts occur on sandy and clayey shores. The sand meadows occur (a) in open bays, near the mouths of rivers; there the sand is purest, and a gentle surf arranges it in long sandbanks and lagoons, or swamps, alternately; (b) in sheltered bays, on gently rising shores, on which the meadow generally passes into groves and forests. Here the sand is freely mixed with clay. Clay meadows, on the other hand, occur in shallow water where there are no rivers, and the coast is rich in low islands separated by shallow channels. It is on these meadows that are found the so-called "barren polygons"—a formation due to the cracking of the clay in dry weather and the rising to the surface, along the cracks, of salt water which evaporates and leaves salt crystals all along the cracks, thus covering the soil with a network of white polygons.

Substages of the meadow coast are the shrub coasts, narrow strips of meadow covered with shrubs, and the bluff coast, due to erosion.

2. The pasture coasts are distinguished from the first type by the occurrence

of boulders and vestiges of forests, and they are classified as sand pastures with a sandy, and boulder pastures with a clayey, soil.

3. Sandy coasts occur only on the open ocean, not in bays. They are either wide sand beaches or narrow strips of sand before a rocky coast, running straight or in a curved line, and are always accompanied by parallel ridges of dunes running also straight or curved, respectively. It is very significant that a long plateau of sand always extends from such a coast out into the ocean, and that, contrary to (a), they appear absolutely independent of the mouths of rivers. This would contradict the statement of Sokolow that the distribution of permanent dunes on the coast coincides with the arrangement of river mouths, whither sand is transported by the rivers. Here it seems that the submarine sand plateau furnishes the material for the dunes, each incoming wave depositing a load of sand on the shore and the undertow washing the light particles again out into the sea. On a rising coast like this one, the continuous gain of land and the parallelism of the dunes to the shore seem to correspond very well in support of this theory.

4. The stony coasts are either pebble coasts, along the shores of necks and on the outside shores of islands, or boulder ("block") coasts on the inner sides of the bays. They are but partly of glacial origin; much credit for their existence must be given to the transporting powers of coastal and river ice in this region. One can easily tell the two kinds of deposits by their scratches, those of the recently-transported material being more superficial and less regular.

5. On the rocky coasts proper, granite and gneisses appear in more or less rounded hills, both as hills on the land and as islands in the ocean. Where the waste has connected the islands with the mainland and among themselves, a beautiful forested coast is the result. The same care as under 4 must be taken in attributing the shape of these hills to glaciation alone. While they are unmistakably *roches moutonnées*, their original curvature is very probably due to rock structure. It has been observed that this particular granite has a distinct tendency to break in concentric layers, and thus glacial action is probably responsible only for the final polishing and the scratching of the rock.

Of terraces, none but pseudo-terraces are found, either where in front of a pebble or boulder wall a narrow strip of meadow has been formed, or where on the shore meadows the action of the waves has worn out a bluff with a beach below.

The hardness and shape of the subsoil determine the topography of the region to this day, with the only exception of a depression in the central part of the coast where the rock surface is so low that considerable deposits of sediment were made in the stage of submersion, and their shape is now determined by the action of the waves and rivers. Even the islands, however, are nothing but elevations of bed rock clothed with sediments, and both the bottom of the sea and the surface of the back country repeat the same general lines of structure which are exhibited on the coast.

The book is illustrated with a large number of excellent photographs, and is a valuable contribution to the geography of Finland, as well as to the geography of the coasts in general.

M. K. G.

**British Rainfall.**—Few meteorological publications are more widely known than *British Rainfall*, a report which is unique in meteorological literature. The forty-fourth volume has been reached, and bears the date 1905. Dr. H. R. Mill, the present compiler of the report, succeeded the late Mr. G. J. Symons, who